

Application No. 10/599,870
Amendment dated July 13, 2011
Office Action of April 13, 2011

REMARKS

Claims 34-46 are pending in the application.

Applicants have amended Claims 34 and 46.

Claims 1-33 were previously cancelled. Applicants have now cancelled Claims 41 and 42, without prejudice or disclaimer of that which is defined thereby.

Upon entry of this paper, therefore, Claims 34-40 and 43-46 will remain presented for examination.

Applicants turn now to the substance of the Action.

Section 112 Rejections

Claims 34-46 and 14 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement, for the reasons set forth on pages 2-3 of the Action.

Applicants have amended the claims to address this Section 112 rejection.

Reconsideration and withdrawal of the Section 112 rejections are respectfully requested.

Section 103 Rejections

Claims 34-40 and 43-45 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,559,163 ("Dawson et al."), for the reasons given on pages 4-5 of the Action.

Claim 41 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dawson et al., for the reasons given on pages 5-6 of the Action.

Claims 41-42 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dawson et al., as applied to claim 34 above, in further view of U.S. Patent No. 6,265,061 ("Kang et al."), for the reasons given on pages 6-7 of the Action.

Claims 34-45 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kang et al., for the reasons given on pages 7-9 of the Action.

Claim 46 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kang et al., for the reasons given on pages 9-11 of the Action.

Applicants' cancellation of Claims 41-42 moots the Section 103 rejections thereof.

Applicants traverse the remaining Section 103 rejections.

Applicants provide for the Examiner's benefit the proper legal setting under which an examination under Section 103 is to be conducted of an application for Letters Patent of the United States.

Under Section 103, to establish a *prima facie* case of obviousness, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. KSR International Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007). Moreover, the cited documents must disclose, teach or suggest all of the recitations of the claims under review. If more than one document is combined together to form a rejection under Section 103, which is the case here, the reason to make the claimed combination, and a reasonable expectation of success, must be found elsewhere than in Applicants' own disclosure, such as in the cited documents of record, the nature of the problem to be solved, or in the knowledge/understanding of the person of ordinary skill in the art. MPEP § 2143; In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991). The instant Section 103 rejections do not meet these requirements.

The present invention as defined by Claim 34 is directed to a UV curable coating composition which when cured is abrasion resistant. The composition comprises:

- a) trimethylolpropane triacrylate in an amount between about 5% and about 85% by weight of the composition,
- b) N,N-dimethyl acrylamide in an amount between about 1 and about 30% by weight of the composition,
- c) silica nanoparticles in an amount between about 30 and about 50% by weight of the composition and where at least about 50% of the silica nanoparticles are present as a premix with trimethylolpropane triacrylate, and
- d) at least one photoinitiator which absorbs only in the UV range of the electromagnetic spectrum. A cured coating of the UV curable coating composition maintains about 95% or higher of its post-cure gloss when subjected to about 100 cycles of grade 3 steel wool with a load of about 50 lbs applied per Federal Specification FF-W-1825.

And as defined by Claim 46, the present invention is directed to an abrasion resistant road reflector comprising at least one surface with a coating thereon of a composition comprising:

- a) trimethylolpropane triacrylate in an amount between about 5% and about 85% by weight of the composition,

b) N,N-dimethyl acrylamide in an amount between about 1 and about 30% by weight of the composition,

c) silica nanoparticles in an amount between about 30 and about 50% by weight of the composition and wherein at least about 50% of the silica nanoparticles are present as a premix with trimethylolpropane triacrylate, and

d) at least one photoinitiator which absorbs only in the UV range of the electromagnetic spectrum. The coating when cured maintains about 95% or higher of its post-cure gloss when subjected to about 100 cycles of grade 3 steel wool with a load of about 50 lbs applied per Federal Specification FF-W-1825.

Two patent documents are cited in support of the Section 103 rejections. They are: Dawson et al. and Kang et al.

Neither document, whether taken individually or in combination, detracts from the patentability of the present invention.

Dawson is directed to and claims a UV curable coating composition comprising: a) at least one photoinitiator selected from acylphosphine oxides, Michler's ketone, benzyl, 2-chlorothioxanthone, and mixtures thereof; b) at least one photopolymerizable UV absorber having ethylenic unsaturation; c) at least one UV curable acrylic monomer; and d) silica, where the photoinitiator is said to have the ability to absorb a

significant portion of the total energy needed to cure the coating from wavelengths in which the UV absorber does not appreciably absorb.

Kang et al. is directed to and claims a retroreflective article, comprising a substrate and a coating provided on at least a portion of a surface of the substrate, the coated portion being retroreflective and the coating comprising a cured ceramer derived from ingredients comprising: (a) free-radically curable binder; (b) colloidal inorganic oxide; and (c) fluoro/silane that comprises a hydrolysable silane moiety and a fluorinated moiety. Kang reports that the retroreflective articles are abrasion resistant.

However, the compositions of Dawson et al. and the cured compositions described by Kang et al. differ significantly from the presently claimed invention. Notably, Dawson et al. does not speak to silica nanoparticles in an amount between about 30 and about 50% by weight of the composition and where at least about 50% of the silica nanoparticles are present as a premix with trimethylolpropane triacrylate. And Kang fails to disclose, teach or suggest a composition having the specific components in the specific amounts presently claimed.

Significantly, neither Dawson et al. nor Kang et al. disclose, teach or suggest that a cured coating of either

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composition maintains about 95% or higher of its post-cure gloss when subjected to about 100 cycles of grade 3 steel wool with a load of about 50 lbs applied per Federal Specification FF-W-1825. Moreover, given their respective lack of disclosure, neither document provides motivation to look to the other to reach the invention as now claimed.

Accordingly, based on the above, reconsideration and withdrawal of the Section 103 rejections are respectfully requested.

To the extent that the Examiner does not believe that the present paper places the application in condition for allowance, he is respectfully requested to contact Applicants' undersigned attorney may be reached by telephone at (860) 571-5001, by facsimile at (860) 571-5028 or by e-mail at steve.bauman@us.henkel.com. All correspondence should be directed to the address given below.

Respectfully submitted,



Steven C. Bauman
Attorney for Applicants
Registration No. 33,832

HENKEL CORPORATION
Legal Department
One Henkel Way
Rocky Hill, CT 06067
Customer No. 31217